

DIVISION OF FORESTRY AND WILDLIFE

Within their ocean sphere, the islands of Hawai‘i are one of Earth’s great treasures, blessed with an astonishing variety of unique natural environments and complex native ecosystems. Yet this once-isolated “paradise” bears the stark burden today of the most threatened biodiversity in the world.

The islands of Hawai‘i have nourished and fascinated humankind for thousands of years with their rainforests and fertile valleys, abundant streams, teeming reefs, lava summits and snowfields, plunging sea cliffs, and rugged canyons. Today, our natural

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resources face an increasing pressure to sustain our community with the means for food, shelter, economic and recreational opportunities.

Division of Forestry and Wildlife (DOFAW) is the largest land management entity in the State of Hawai'i, with direct responsibility for approximately 800,000 acres of state trust lands. These lands are managed through an integrated system of forest and natural area reserves, plant and wildlife sanctuaries, and wilderness and game management areas. Within this system is the 11th largest area of state-managed forest lands in the United States, and the vast majority of America's tropical rainforests.

DOFAW is the oldest forest management agency in the western United States, originating in 1903 with a mandate to protect and enhance forested watersheds. The organization has evolved into one of the few professional forest and wildlife organizations in the United States with a diverse set of challenging proprietary and regulatory missions.

Responsibility is statewide for watershed and endangered species protection, wildland fire suppression, public trails and access, and game management programs. Cooperative

natural resource programs are also planned and implemented on other public and privately owned lands through natural area and watershed partnerships, forest stewardship programs, urban forestry projects and other agreements.

Budget reductions of 20% over the past six years continue to force program re-evaluation and downsizing of the division's management capabilities. DOFAW has five operational program areas: Watershed Protection and Management, Native Resources Protection and Management, Outdoor Recreation Resources Management and Development, Forest Products Development, and Public Information and Stewardship.

HIGHLIGHTS

In 1997-98, DLNR began dialogue with major public and private landowners on O'ahu toward the goal of establishing the Ko'olau Mountains Watershed Partnership. The partnership will be focused on developing a detailed, cooperative management plan for this 100,000 acre watershed, that will benefit the public with improved resources conservation and more efficient use of funding and personnel.

In the biennium, DOFAW initi-

ated a number of significant efforts for the conservation of threatened and endangered native Hawaiian forest birds. The division launched a multi-year cooperative project with the U.S. Fish and Wildlife Service and U.S.G.S. Biological Resources Division for recovery of the endangered puaiohi. Activities will include locating nests, banding birds, collecting eggs for captive propagation, and maintaining predator control and active nests. In 1997-98, DOFAW collaborated with Maui Land and Pine, The Nature Conservancy Hawai'i, U.S.G.S. Biological Resources Division and U.S. Fish and Wildlife Service to conduct the first forest bird survey of West Maui since 1980.

In the same year, avian biologists were able to locate and carry out sexing tests of the country's most endangered bird – Maui's po'ouli. Test results showed that the world's only three known po'ouli remaining in their home ranges are two females and one male. Following this announcement, DOFAW held a critical meeting in May 1998 of natural resource managers, field biologists and conservation biologists to discuss any and all possible next steps for the recovery of this rare forest bird. The group reached con-

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sensus on continuing management priorities outlined in the Maui Forest Bird management plan, which calls for: public involvement in discussion of options; more effective predator control in the birds' habitat; captive rearing if a nest should be found with eggs. Action steps will include: immediate rat control efforts in the home ranges of the three birds and evaluation of the effectiveness of those control methods; monitoring of the known birds to learn more about their behavior, feeding habits and health; drafting required environmental documents for public review for recovery alternatives, and new surveys of the West and East home ranges of the po'ouli in hopes of locating more birds.

The prevention and control of alien species introductions to the state is the joint responsibility of the Hawai'i Department of Agriculture and Department of Land and Natural Resources. The Department of Agriculture regulates the import of alien species into the state. If populations become established in the state, their control is the responsibility of the DLNR. In March 1998, the Department participated in a two-day Brown Tree Snake coordination meeting with state and federal agencies, which focused on

inter-agency cooperative efforts to prevent the introduction and spread of the Brown Tree Snake from Guam, to Hawai'i and other islands and continents. The meeting brought the issue to a much higher level in the federal government than ever before, and assured continued funding, plus a slight increase.

Also in March 1998, DLNR implemented new rules that prohibit the intra-state movement, release into the wild, and the export of injurious alien species that are pests in Hawai'i. Included on this list are an assortment of birds, frogs, turtles, lizards, clams, and snails, each of which is known or suspected of causing significant ecological or economic damage to our islands' natural resources or agriculture. Each of these species became established in Hawai'i either by accidental introduction or via the illegal release of pets. The revised rules are intended to prevent the spread of these pest species around the state by making it illegal to release them into the wild, transport them to a part of the state where they do not already exist, or export them out of state. Preventing exports is necessary to remove the economic incentive in commercial trade that has encouraged their

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spread, and that could encourage the illegal introduction of yet additional species.

A multi-year effort by DLNR and the U.S. Department of Agriculture to control the population of Polynesian rats at Green Island in the Kure Atoll appears to have succeeded. Wildlife biologists of the two agencies, who instituted the rat control program in 1993, say follow-up assessments show that for the last four years there has been no sign of rat activity at Green Island. This seems to indicate that rats have apparently been successfully eradicated there. However, scientists warn that continued monitoring and vigilance should be maintained to avoid a resurgence of a remnant population. The success of the rat control program at Kure Atoll shows that resource management agencies in Hawai'i have the technology and expertise to conduct large-scale predator control programs of the type used in New Zealand. It also demonstrates the importance of predator control for native ecosystem management and sustainability. These kinds of control are a top priority management action needed anywhere predators are present.

In January 1998, the Board of Land and Natural Resources

approved a new commercial activity policy for state lands, including parks, forest areas, trails and other natural areas. The new policy is designed to clarify allowable activities on state lands and outline priority uses for the lands. Protection of natural and cultural resources is of highest priority. Next is public use, followed by commercial activity. The policy allows DLNR staff to monitor and regulate the growing number of nature-based tourism activities such as hiking, snorkeling, birding and horseback riding that now take place in our islands, and to ensure that they are carried out in an environmentally responsible manner that will not compromise natural resources.

In 1996-97 DLNR participated in formation of Nā Hoa Mahi'ai, the Hawai'i Forestry and Communities Initiative, a formal partnership of five state and three federal agencies. The partnership is helping to promote commercial forestry that meets community needs. Other steps taken by DOFAW during the biennium to support forestry development include completion of an inventory of 17,950 acres of the state's non-native tree plantations in Waiākea and Hāmākua, completion of a forest management plan for the

12,000 acre Waiākea Timber Management Area, and establishment, in June 1998 of an extension forestry program at the University of Hawai'i at Mānoa, the first ever in the state.

In June 1998, DLNR celebrated the 10th year anniversary of its Nā Ala Hele Hawai'i Statewide Trail and Access Program (NAH), in conjunction with activities highlighting National Trails Day. This biennium Governor Cayetano approved Act 106, which created stable funding for Nā Ala Hele. The funding in Act 106 comes from a percentage of the state fuel tax. Nā Ala Hele was initially created to curb the loss of historic trails, restore public access to specific existing trails, develop new trails, and manage and maintain various existing public trails. Today, Hawai'i's network of close to 300 miles of public hiking trails passes through some of the most beautiful and inspiring natural and cultural sites in the country. Trails and accesses are necessary for agencies such as DLNR to monitor and manage watersheds, some of which host imperiled native species. In addition, certain trails and unpaved roads provide critical access for fire suppression. A significant factor in Nā Ala Hele's success has been the support of trail user groups and



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community volunteers who engage in trail construction and stewardship projects, and participate in the Nā Ala Hele Trail and Access Advisory Councils.

The following are program descriptions and accomplishments for FYs 1996-97 and 1997-98:

WATERSHED PROTECTION & MANAGEMENT PROGRAM

PROGRAM DESCRIPTION

The goal of the Watershed Protection and Management Program is to ensure viable water yields by protecting and enhancing the condition of Hawai'i's forested watersheds to retard rapid run-off of storm flows, prevent and reduce soil erosion, and improve infiltration rates into Hawai'i's aquifers. This is accomplished through the following objectives:

Objective 1 – Prevent and suppress forest and range fires on key watersheds that include forest reserves, public hunting areas, and natural area reserves.

PROGRAM ACCOMPLISHMENTS, FY 1996-97.

- Fought 95 fires totaling 370 acres statewide.

- Maintained 175 miles of fire access roads statewide.
- Conducted fire training classes for DOFAW employees, and other state and private agencies.

PROGRAM ACCOMPLISHMENTS, FY 1997-98.

- Fought 147 fires totaling 15,754 acres statewide.
- Maintained 187 miles of fire access roads statewide.
- Conducted fire training classes for DOFAW employees, and other State and private agencies.

Objective 2 – Cooperate with established fire control agencies for the protection of other wildlands not within departmental protection areas to the extent needed to provide for public benefits and environmental protection.

PROGRAM ACCOMPLISHMENTS, FY 1996-97, 1997-98.

- Provided wildland fire protection of 3,360,000 acres statewide.
- Control livestock trespass in impacted watersheds (e.g. forest and natural area reserves).

PROGRAM ACCOMPLISHMENTS, FY 1996-97.

- Removed 19 wild cattle in the Kula, Ko'olau, West Maui, and Makawao forest reserves, Maui.

PROGRAM ACCOMPLISHMENTS, FY 1997-98.

- Removed 29 wild cattle in the Kula, Ko'olau, West Maui, and Makawao forest reserves, Maui.

Objective 3 – Survey and control forest insect and diseases that can damage watershed integrity.

PROGRAM ACCOMPLISHMENTS, FY 1996-97.

- Surveyed 275,060 acres statewide for insect pests, plant diseases, and weeds.
- Initiated a program to control Banana Poka with *Septoria passiflora* fungus in Kula, Maui and portions of West Hawai'i.
- Monitored the effects of the *Septoria passiflora* fungus on Banana Poka in Kōke'e, Kaua'i, and Mauna Kea, Hawai'i.

PROGRAM ACCOMPLISHMENTS, FY 1997-98.

- Surveyed 248,970 acres statewide for insect pests, plant diseases, and weeds.
- Initiated a program to control the spread of *Miconia* with the *Collectotrichum gloeosporioides* *Miconia* fungus in Hana, Maui and areas around Hilo, Hawai'i.



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Objective 4 – Plan for and implement the reforestation and management of deteriorating and/or disturbed state watersheds as may be appropriate for watershed value enhancement.

PROGRAM ACCOMPLISHMENTS,
FY 1996-97.

- Assisted the Department of Health in removing approximate 131 gallons of assorted toxic paint waste illegally dumped in the Honolulu Watershed Forest Reserve.

Objective 5 – Produce and distribute tree seedlings for windbreaks, soil erosion control, and watershed enhancement.

PROGRAM ACCOMPLISHMENTS,
FY 1996-97, 1997-98.

- Distributed 300,000 windbreak seedlings statewide each year.

Objective 6 – Promote, encourage, and advocate for incentives to encourage the maintenance and enhancement of key watersheds on private lands.

PROGRAM ACCOMPLISHMENTS,
FY 1996-97.

- Cooperated with 18 landowners statewide in managing 2,139 acres of private land under the Forest Stewardship Program.

- Continued to participate in the East Maui Watershed Partnership.

PROGRAM ACCOMPLISHMENTS,
FY 1997-98.

- Cooperated with 12 landowners statewide in managing 2,226 acres of private land under the Forest Stewardship Program.
- Continued to participate in the East Maui Watershed Partnership.
- Collaborated with private landowners to establish the West Maui Watershed Partnership.
- Participated in an economic valuation study and dialogue with private landowners towards establishing the Ko'olau Watershed Partnership on O'ahu.

NATIVE RESOURCES PROTECTION AND MANAGEMENT PROGRAM

PROGRAM DESCRIPTION.

The goal of the Native Resources Protection and Management Program is to protect and enhance the condition of Hawai'i's unique native plant and animal species, and native ecosystems. They bring inherent value to Hawai'i's citizens, and offer productive value to science, education, industry and the cultural enrichment of future generations.

The program seeks to prevent species extinctions whenever possible. This is accomplished through the following objectives:

Objective 1 – Insure viable populations of native species and increase populations of endangered species by protecting and managing their natural habitats via a system of state-owned and managed sanctuaries, forest and natural area reserves (NAR), and cooperative managed areas.

PROGRAM ACCOMPLISHMENTS,
FY 1996-97.

- Maintained 35 plant sanctuaries on various sites on Hawai'i island to protect the Mauna Kea silversword, the Hawaiian vetch, uhiuhi, kauila, koki'o, loulu, 'ohai and other rare, threatened and endangered species.
- Maintained 24 rare plant sanctuaries on Kaua'i and Maui.
- Maintained 11 plant sanctuaries in O'ahu Natural Area Reserves protecting rare, threatened and endangered species.
- Initiated a multi-year cooperative project with the U.S.F.W.S. and the U.S.G.S./Biological Resources Division to recover the endangered puaiohi including locating



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nests, banding birds and maintaining predator control and active nests.

PROGRAM ACCOMPLISHMENTS,
FY 1997-98.

- Successfully pollinated and out-planted Mauna Kea and Mauna Loa silverswords in both planted and wild populations.
- Maintained 24 rare plant sanctuaries on Kaua'i and Maui.
- Maintained 11 sanctuaries in O'ahu Natural Area Reserves protecting rare, threatened and endangered species. A major milestone was the flowering in the wild of the first out-planted *Cyanea superba* in the Pahole NAR.
- Continued to manage habitat in the Hanawā NAR on East Maui for five species of endangered forest birds and other native species by animal, predator, and weed control.
- Continued predator control to remove rats, mongooses, and cats in habitat of native forest birds such as palila, po'ouli and puaiohi on Hawai'i, Kaua'i, and Maui.

Objective 2 – Conduct an aggressive propagation and re-introduction program for threatened and endangered species through activities such as bird rearing, plant nurseries and out-planting.

PROGRAM ACCOMPLISHMENTS,
FY 1996-97.

- Operated 3 rare plant mid-elevation nurseries on Kaua'i, O'ahu and Hawai'i.
- Assisted in the logistics, and participated as a partner with the National Biological Service in field study, and collection of eggs for captive propagation of puaiohi on Kaua'i, and the 'ākohekohe and Maui parrotbill on Maui.

PROGRAM ACCOMPLISHMENTS,
FY 1997-98.

- Operated 3 rare plant mid-elevation nurseries on Kaua'i, O'ahu and Hawai'i.
- Constructed and maintained 2 endangered tree snail sanctuaries in the Pahole NAR, O'ahu.
- Assisted in the collection of eggs for captive propagation of the small Kaua'i thrush.
- Located 26 'ākohekohe (crested honey creepers) and 2 Maui parrotbill nests and collected eggs for captive propagation.

- Located the only three known po'ouli in the world, and identified their home ranges on Maui.
- Maintained and serviced nēnē release pens at Hana'ula, West Maui. Sixteen nēnē were released, and two nēnē were fitted with radio transmitters and tracked.

Objective 3 – Develop, protect and maintain wetland habitat through management and cooperative agreements with other agencies and private organizations.

PROGRAM ACCOMPLISHMENTS,
FY 1996-97, 1997-98.

- Conducted semi-annual waterbird surveys in approximately 150 wetland areas statewide.
- Maintained 20 signs, one-half mile of access road, and one mile of fence at Hamakua Marsh, O'ahu.
- Repaired and maintained 3 miles of perimeter fencing, four miles of road and trails, and continued native plant restoration and waterbird monitoring at Kanahā Pond Wildlife Sanctuary, Maui.
- Developed plans for major wetland restoration projects at Kawainui Marsh and Pouhala Marsh, O'ahu.



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Objective 4 – Control livestock trespass and maintain other animal populations at non-damaging levels for unique native species and ecosystems.

PROGRAM ACCOMPLISHMENTS,
FY 1996-97.

- Organized control methods that removed over 40 pigs and 35 goats from the remote sections of Natural Area Reserves, statewide.
- Continued survey and ungulate control activities in palila critical habitat, Hawai'i island.

PROGRAM ACCOMPLISHMENTS,
FY 1997-98.

- Organized control methods that removed over 126 pigs and 191 goats and 5 axis deer from reserves.
- Monitored ungulate damage in the Alaka'i Wilderness Preserve, Kaua'i.
- Continued survey and ungulate control activities in palila critical habitat, Hawai'i island.

Objective 5 – Continue to support efforts for Brown Tree Snake and other alien species control by promoting interagency cooperation, expanding the network of volunteers,

and updating training and equipment for effective rapid response capacity.

PROGRAM ACCOMPLISHMENTS,
FY 1997-98.

- Conducted snake capture training for division employees and other state, federal and private agencies on the islands of O'ahu and Kaua'i.
- Responded to two reported snake sightings on O'ahu, in conjunction with Department of Agriculture officials.
- Participated in interagency efforts to minimize the risk of new alien species being introduced as a result of the Kahului, Maui Airport Expansion.
- Continued participation in the activities of the Coordinating Group on Alien Pest Species (CGAPS) activities to reduce the threat of alien species entering the state.

Objective 6 – Survey and control noxious plant species that impact native flora and fauna.

PROGRAM ACCOMPLISHMENTS,
FY 1996-97.

- Helped to initiate the Maui Invasive Species Committee (MISC) project on Maui.

- Funded the Operation Miconia project to eradicate this invasive plant on Hawai'i and Maui.

PROGRAM ACCOMPLISHMENTS,
FY 1997-98.

- Continued directing the Operation Miconia eradication program on Maui.

Objective 7 – Manage the State Seabird Sanctuary system and other seabird nesting colonies by controlling predators, enhancing nesting habitat, salvaging and rehabilitating grounded seabirds, and enforcing wildlife sanctuary rules.

PROGRAM ACCOMPLISHMENTS,
FY 1996-97, 1997-98.

- Conducted annual surveys of all state sanctuaries and other seabird nesting colonies in the County of Honolulu, and Kure Atoll, and estimated population densities.
- Surveyed seabird colonies in Maui County each year, and identified new nesting locations.

PROGRAM ACCOMPLISHMENTS,
FY 1997-98.

- Conducted the 19th year of the seabird salvage project on Kaua'i that involved 867 threatened Newell's Shearwaters and 13 endangered dark rumped petrels.



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- Monitored Laysan albatross at Ka'ena Point Natural Area Reserve and Kuaokalā Game Management Area on O'ahu.
- Posted 86 signs at eight State Seabird Sanctuary islands off O'ahu's coastline.

Objective 8 – Protect native species and their habitats through predator control and other improvement activities such as planting native species and weed control.

PROGRAM ACCOMPLISHMENTS, FY 1996-97, 1997-98.

- Maintained over 40 miles of existing ungulate control fences in Natural Area Reserves statewide each year.
- Continued predator control and monitoring program at Kure Atoll, Ka'ena Point NAR and Moku'auia Seabird Sanctuary, O'ahu; Kanahā Pond and Hana'ula Wildlife Sanctuary, Maui; and Kapāpala and Pu'u Wa'a Wa'a Sanctuary on Hawai'i.
- Secured new fencing around the 3,800 acre Pu'u Wa'awa'a sanctuary and maintained four exclosure fences around rare plant communities.

Objective 9 – Conduct surveys of rare and endangered plants and

wildlife, and monitor the effects of management activities.

PROGRAM ACCOMPLISHMENTS, FY 1997-98.

- Captured and banded 86 'ākohekohe, 24 Maui parrotbill, and one po'ouli, Maui.
- Conducted tree snail surveys in the Ko'olau Mountain Range, O'ahu.
- Conducted a three-day survey in Alaka'i Wilderness Preserve to locate puaiohi (small Kaua'i thrush).
- Conducted surveys for O'ahu 'elepaio in the Ko'olau and Wai'anae mountain ranges.
- Collaborated with Maui Land and Pine, The Nature Conservancy of Hawai'i, U.S.G.S./Biological Resources Division and assisted the U.S. Fish and Wildlife Service in conducting the first forest bird survey of West Maui since 1980.
- Conducted palila and 'oma'o surveys in the Ka'ū Forest Reserve, Hawai'i, with the assistance of U.S.G.S./B.R.D. biologists and volunteers.
- Monitored 62 captive-reared nēnē released at Nualolo 'Āina along the Nā Pali Coast, Kaua'i.
- Surveyed nēnē on Kaua'i, Maui and Hawai'i, and determined that

approximately 1,000 nēnē exist in the wild.

Objective 10 – Administer the Natural Area Partnership Program (NAPP).

PROGRAM ACCOMPLISHMENTS, FY 1996-97, 1997-98.

- Funded and administered private landowner assistance natural area partnership program, protecting over 25,000 acres of some of the best remaining ecosystems on the islands of Maui, Moloka'i, and Lāna'i.

Objective 11 – Promote and encourage meaningful applied research that addresses endangered species and natural area management needs and concerns, such as limiting factors, or critical habitat needs for endangered plant species.

PROGRAM ACCOMPLISHMENTS, FY 1996-97, 1997-98.

- Funded University of Hawai'i plant research at the Lyon Arboretum.
- Funded a research project and assisted in the collection of data for the tree snail sanctuaries and predator control in Pahole NAR, O'ahu.



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- Conducted predator control study to determine rodent activity and cost efficient methods for controlling rats, mongoose and cats.
- Investigated the causes of decline of 'elepaio including predation by introduced mammals and avian disease.

OUTDOOR RECREATION RESOURCES MANAGEMENT AND DEVELOPMENT PROGRAM

PROGRAM DESCRIPTION.

The three goals of the Outdoor Recreation Resources Management and Development Program are to: enrich leisure time and capabilities of Hawai'i's residents and visitors by providing opportunities and facilities for multiple outdoor recreational activities such as hiking, hunting, fishing, bicycles, equestrians and motorized off-road recreation; maintain trails and control wildland fires, through the Nā Ala Hele Hawai'i Trail and Access System, and conduct search and rescue, watershed protection, and other natural resource management activities; and to maintain and enhance where possible, a public hunting program of recreational, subsistence, and traditional hunting

methods to provide a source of food and outdoor recreation for the public, and as a means to manage and control introduced game animals. This is accomplished through the following objectives:

Objective 1 – Maintain and construct roads and trails to allow managed public use of recreational areas.

PROGRAM ACCOMPLISHMENTS, FY 1996-97.

- Maintained 330 miles of trails and accesses and 250 miles of roads for public use.
- Installed signs at the Hawai'i Tropical Botanical Garden (HTBG) to enable the opening of the Ala Kahakai alignment of the Onomea trails, Hawai'i.
- Assisted Hāmākua hunters and fishermen on Hawai'i island to gain selected access through Kamehameha Schools/Bishop Estate property.
- Completed the Māmane Trail in the Kula Forest Reserve on Maui.
- Designed and constructed a shoreline access walkway and scenic overlook to Maui's highly popular Mokulē'ia Bay, which includes the Honolulu-Mokulē'ia Marine Life Conservation District, in collaboration with Maui

Land and Pineapple Company.

- Completed an additional quarter-mile of the boardwalk through the Alaka'i Swamp on Kaua'i, with volunteer assistance.
- Installed public parking area at both ends of the Lāhainā Pali Trail, with cooperation from Wailuku Agribusiness, Haleakalā Ranch and the Department of Transportation. Interpretive kiosks constructed of stone were placed at both trailhead locations.

PROGRAM ACCOMPLISHMENTS, FY 1997-98.

- Maintained 330 miles of trails and accesses and 250 miles of roads for public use.
- Established an off-road motorized vehicle sub-committee through the O'ahu Advisory Council to investigate potential areas suitable to develop multiple-use trail recreation.
- Installed 2 trailhead boot brushes at the Poamoho and Schofield-Waikāne Trails, O'ahu to reduce the spread of noxious weed species along these environmentally sensitive trails.
- Installed a bicycle rack at a transition point along the Wiliwilinui Trail, O'ahu to accommodate bicycle riders.



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- Reconstructed portions of the Kuamo'o-Nounou Trail Bridge, Kaua'i.
- Removed rubbish on a weekly basis from 30 trail shelters and campground facilities, Kaua'i.

Objective 2 – Protect ancient and historic trails and accesses.

PROGRAM ACCOMPLISHMENTS,
FY 1996-97, 1997-98.

- Preserved portions of the Ala Aupuni (King's Highway) and enhanced shoreline access through involvement with a series of private subdivision developments.
- Collaborated with the State Historic Preservation Division to locate intact sections of the Ala Aupuni and to develop a methodology to accommodate public use.

Objective 3 – Conduct public hunting seasons, inventory and conduct surveys of game birds and mammals, evaluate hunter harvest for setting seasons and rules, and manage public hunts.

PROGRAM ACCOMPLISHMENTS,
FY 1996-97, 1997-98.

- Provided access to 60 different public hunting areas for 10,000 licensed hunters that provided

over 915,000 acres for recreational and subsistence hunting each year. Approximately 25,000 hunter trips were taken for six species of game mammals, and 10,000 hunter trips for 15 species of game birds each year.

Objective 4 – Construct and maintain forest and wildlife recreational facilities such as trail shelters, arboreta, picnic grounds, viewpoints, signs, bridges and campgrounds.

PROGRAM ACCOMPLISHMENTS,
FY 1996-97, 1997-98.

- Maintained and serviced 45 hunter checking stations.
- Maintained and serviced 67 feeding stations and watering units.
- Maintained or replaced 57 signs on public hunting areas statewide.

Objective 5 – Improve game wildlife populations and habitat by planting food crops, eradicating noxious vegetation, predator control, and restocking game birds where appropriate.

PROGRAM ACCOMPLISHMENTS,
FY 1996-97.

- Purchased and released 150 ring-necked pheasants in the Kahakuloa Game Management Area, Maui.

- Mowed and hand-cleared 405 acres of noxious weeds on public hunting areas statewide.
- Planted 15 acres of grasses for game bird nesting cover, statewide.

PROGRAM ACCOMPLISHMENTS,
FY 1997-98.

- Released 240 ring-necked and white pheasants on Kaua'i and 150 ring-necked pheasants on Maui.
- Mowed 200 acres to create game bird nesting cover on the island of Hawai'i.

Objective 6 – Construct and maintain hunter check-in stations; wildlife water units; hunter information, boundary, and safety zone signs; and game feeding sites.

PROGRAM ACCOMPLISHMENTS,
FY 1996-97.

- Serviced 129 wildlife watering units and maintained or replaced 268 signs in public hunting areas statewide.
- Maintained 79 miles of fencing in public hunting areas, statewide.

PROGRAM ACCOMPLISHMENTS,
FY 1997-98.

- Maintained and made repairs on 77 miles of fencing within public hunting areas, statewide.



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Objective 7 – Advocated for public access by commenting on development plans and forming agreements with private landowners to increase public use of trails and accesses.

PROGRAM ACCOMPLISHMENTS,
FY 1996-97.

- Working with development firm Oceanside 1250 to determine the alignment of the Kona Old Government Road.
- Coordinated the planning and the development of the South Maui Heritage Corridor, which includes the transfer of three miles of state-owned shoreline to Maui County and the construction of pathways.
- Participated with the Luana Hills Country Club, City and County of Honolulu, and representatives of Maunawili Estates Subdivision to establish an official route to Maunawili Falls.

PROGRAM ACCOMPLISHMENTS,
FY 1997-98.

- Obtained quit-claim deed for an approximately 4-mile section of a trail alignment that traverses Oceanside 1250 property in Kailua-Kona, Hawai'i.

- Continued planning efforts on the South Maui Heritage Corridor, collaborating with the National Fish and Wildlife Service, South Maui Heritage Corridor Committee, Tri-Isle Resources Conservation and Development, Inc., and the Kīhei Canoe Club.
- Identified and mapped previously lost portions of Ala Aupuni (King's Highway) in Kīpahulu and Kahakuloa on Maui.
- Collaborated with the Puna Community Association members to restore and reopen the Puna Old Government Road. Initiated a title search and land survey of the area. Constructed 25 ahu (Hawaiian trail markers) with the assistance of the Boy Scouts of America.

Objective 8 – Provide additional hunting opportunities by developing new public hunting areas and creating incentive program to encourage more hunting on private lands.

PROGRAM ACCOMPLISHMENTS,
FY 1996-97, 1997-98.

- Leased 15,427 acres of land from the Department of Hawaiian Home Lands to provide additional game bird and game

mammal hunting opportunities on the island of Hawai'i.

- Continued to lease 30,000 acres on Lāna'i to provide game bird and game mammal hunting opportunities.

Objective 9 – Develop responsible mechanisms to encourage and manage commercial uses, such as eco-tourism, in ways that sustain the natural resources and provide benefits to the local community.

- Through the Nā Ala Hele Advisory Council, established a commercial guidelines subcommittee to encourage commercial operators to establish standards of conduct, professionalism and responsibility.

FOREST PRODUCTS
DEVELOPMENT PROGRAM

PROGRAM DESCRIPTION.

The goal of the Forest Products Development Program is to broaden the state's economic base by producing, improving, and assisting in the production of high quality forest products to support a sustainable forest industry that maintains and creates jobs while generating rev-



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enue for the State of Hawai'i. This is accomplished through the following objectives:

Objective 1 – Encourage private investment for commercial forest development.

PROGRAM ACCOMPLISHMENTS, FY 1996-97.

- Provided dislocated worker training on basic forest management for 59 individuals.
- Trained eight individuals in basic inventory procedures. Hired six as DOFAW inventory crew in 1997.
- Trained ten adults and youths on nursery procedures such as seedling propagation and improvement.

PROGRAM ACCOMPLISHMENTS, FY 1997-98.

- Participated in 71 community meetings discussing forestry issues and concerns with island residents.
- Provided a workshop session and information booth on forestry at statewide School-to-Work conference, and State Science Fair.
- Sponsored community workshop/field trip on logging - attended by an estimated 100 people.
- Created a branding concept for Hawai'i's Woods with the

Hawai'i Forestry Industry Association (HFIA), that was similar to Kona Coffee and Hawaiian Macadamia Nuts.

- Developed marketing plan for high value-added products such as furniture, bowls, and crafts with HFIA.
- Co-sponsored annual statewide woodworking show with HFIA, highlighting products made from locally grown woods.
- Conducted consumer survey with HFIA to identify wood species and product preferences.

Objective 2 – Plan and administer commercial forest management activities on state land, including resource inventory and forest product sale administration.

PROGRAM ACCOMPLISHMENTS, FY 1996-97.

- Formed the Hawai'i Forestry and Communities Initiative, a formal partnership of five state and three federal agencies helping to promote a commercial forestry industry that meets local community needs.
- Completed inventory of 17,950 acres of the state's non-native tree plantations in Waiākea and Hāmākua, Hawai'i island.

PROGRAM ACCOMPLISHMENTS, FY 1997-98.

- Printed "Best Management Practices" brochures for public distribution.
- Completed forest management plan for the 12,000 acre Waiākea Timber Management Area.
- Tested mainland plywood production run of Eucalyptus and Queensland maple grown at the Waiākea Timber Management Area.
- Inventoried two state forest parcels and one private parcel, totaling 6,470 acres on Kaua'i, Moloka'i and Hawai'i.
- Inventoried 2,280 acres of koa lands at Humu'ula, Hawai'i and provided Department of Hawaiian Home Lands potential options for management.

Objective 3 – Provide private landowners and processors of forest products with technical forestry assistance.

PROGRAM ACCOMPLISHMENTS, FY 1996-97.

- Established an extension forestry program at the University of Hawai'i at Mānoa in June 1998 – the first ever for the state.



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- Recruited and hired an experienced, doctoral level tropical forester to manage Hawai'i's extension forestry program.

PROGRAM ACCOMPLISHMENTS,
FY 1997-98.

- Co-funded six Hawai'i Forest Industry Association quarterly newsletters.
- Co-sponsored Harvest to Market Symposium in Kona.

Objective 4 – Administer state and federal cost-sharing programs such as urban forestry and forest stewardship.

PROGRAM ACCOMPLISHMENTS,
FY 1996-97, 1997-98.

- Administered the Kaulunani Urban Forestry program, which granted over \$220,000 for 32 projects statewide, and leveraged over \$1,000,000 of private sector funds and in-kind services.

Objective 5 – Operate the Central Tree Nursery in Kamuela, Hawai'i, and district nurseries for distribution of high quality tree seedlings for reforestation, special use plantings such as windbreaks and propagation of native plants for out planting.

PROGRAM ACCOMPLISHMENTS,
FY 1996-97.

- Distributed over 690,500 seedlings statewide with an emphasis on windbreaks and native plants.

PROGRAM ACCOMPLISHMENTS,
FY 1997-98.

- Revised state rules for threatened and endangered plants to allow responsible commercial, educational, and home use.
- Distributed over 3,203,900 "sow and go" seedlings for the commercial forest industry that encouraged the establishment of three private nurseries.

PUBLIC INFORMATION & STEWARDSHIP PROGRAM

PROGRAM DESCRIPTION.

The goal of the Public Information and Stewardship Program is to develop volunteer and information programs for natural resource management that allow meaningful and productive community involvement in the stewardship of natural resources on public lands. This is accomplished through the following objectives:

Objective 1 – Develop a website that will give the public easy access to information about the Division of

Forestry and Wildlife, ongoing division projects, and basic conservation information.

PROGRAM ACCOMPLISHMENTS,
FY 1997-98.

- Coordinated construction of the DOFAW website, which includes information about the division; the State's Natural Area Reserves System, including Mt. Ka'ala, Ka'ena Point, and Pahole Natural Area Reserves; and a site for children to learn about native animals of Hawai'i. (www.state.hi.us/dlnr/dfw).

Objective 2 – Encourage private citizens to work on natural resource management projects by supporting community volunteer programs.

PROGRAM ACCOMPLISHMENTS,
FY 1996-97.

- Worked with Moloka'i Hunting Test Working Group, using public hunters to control feral ungulates in the remote North Shore area of Moloka'i.
- Worked with two focus groups (Kohala Regional Forest Management Group and Puna-Volcano Regional Group) to discuss management options and strategies for their respective areas.



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- Coordinated 585 volunteers in performing 2,185 hours of trail improvement work on 37 miles of trails on the island of Maui. Volunteers represented such groups as the Maui Mountain Bike Club, the Sierra Club, the Mauna 'Ala Hiking Club, the Hawaiian Equestrian Trails Association, and the Boy Scouts of America.
 - Regraded severely eroded trail sections, and installed recycled plastic lumber to stabilize the soil and enhance public safety along the Mānana trail, O'ahu, with the assistance of two troops from the Boy Scouts of America.
 - Established a trail stewardship contract with Youth for Environmental Services to restore the heavily used and eroding Mānoa Falls trail on O'ahu.
 - Coordinated volunteer organizations in trail stewardship for the maintenance of the Nounou-Mt. West and the Moalepe/Kuilau trails, Kaua'i.
 - Expanded DLNR's Youth Conservation Corps Program, which introduced youth on O'ahu and Kaua'i to natural resource stewardship projects.
 - Continued volunteer stewardship projects in partnership with the Sierra Club, in the Ka'ala, Ka'ena, and Pahole Natural Area Reserves, O'ahu.
- PROGRAM ACCOMPLISHMENTS, FY 1997-98.
- Repaired and improved the first 2 miles of the Maunawili Trail on O'ahu through a contract with the Sierra Club.
 - Produced an interpretive trail guide for Kīpuka Pu'u Huluhulu, Hawai'i. Coordinated volunteers from the Nature Conservancy's Hoa'Āina Program for youth in the planting of māmane trees generated from seeds collected on site. Hilo High School Greenpeace Program assisted in the removal of alien German ivy in order to allow for the regeneration of native cucumber.
 - Coordinated and supervised 59 volunteers for a total of 950 service hours on various trails and access projects on Kaua'i.
 - Coordinated and supervised 130 individual volunteers (includes support from members of the Maui Mountain Bike Club and the Sierra Club) for a total of 2,207 service hours on various trail and access projects on Maui.
 - Restored a portion of the Hau'ula Loop Trail on O'ahu with assistance from Boy Scouts from Aloha Council.
 - Restored approximately 3/4 of a mile of the Waimano and Service Access Trail on O'ahu, through a series of outings with volunteers from Kūlia I Ka Pono of KS/BE, Boy Scouts from Aloha Council, and the Honolulu Boys and Girls Club.
 - Developed a mountain biking informational pamphlet for general distribution to foster appropriate mountain bicycle use of public trails.
 - Utilized approximately 1,013 volunteers for a total of 4,185 service hours on various trail restoration projects on O'ahu.
 - Maintained the Moalepe Trail on Kaua'i on a quarterly basis (approximately 100 service hours) through a trail stewardship agreement with the Espirit De Corps Riding Academy.
 - Maintained portions of the Nounou-Mt. West Trail on Kaua'i (approximately 80 service hours) through a trail stewardship agreement with the Hyatt Regency Kaua'i.
 - Continued the DLNR Youth Conservation Corps Program, which introduced youth on O'ahu to nat-

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ural resource stewardship projects.

- Continued volunteer stewardship projects in partnership with the Sierra Club, on the Ka'ala, Ka'ena, and Pahole Natural Area Reserves.

Objective 3 – Work with the Hawaiian community to develop appropriate protocols for sustainable traditional and cultural gathering.

PROGRAM ACCOMPLISHMENTS,
FY 1996-97.

- Co-sponsored a conference to inform hālau hula of human impacts to the native forest, and the need for responsible harvesting of native plants.

PROGRAM ACCOMPLISHMENTS,
FY 1997-98.

- Initiated a pilot program with hālau hula for a stewardship project in O'ahu Natural Area Reserves.

Objective 4 – Develop information and educational materials on the division's programs such as maps, reports, brochures, teachers' packets, videos, and posters.

PROGRAM ACCOMPLISHMENTS,
FY 1996-97.

- Collaborated with the City and County of Honolulu by providing funding, storage and distribution for a hiking safety brochure that provides information on how to hike safely.
- Created the Native Hawaiian Forest Birds traveling photo exhibit, with shows on O'ahu, Kaua'i, and Maui.
- Created coloring book and informational brochure to accompany the forest bird photo show.
- Provided resource background for the 'Ōhi'a Productions play, "Voices of the Rainforest."
- Created a "Hawaiian Native Species" photo exhibit.

PROGRAM ACCOMPLISHMENTS,
FY 1997-98.

- Continued to exhibit the traveling forest bird photo exhibit on Moloka'i, Lāna'i, Hawai'i island, and O'ahu.
- Created a bus poster of Hawaiian Humpback whales (in conjunction with the National Marine Humpback Whale Sanctuary).
- Created a Nā Hoa Mahi'ai brochure about the Hawai'i Forestry and Communities Initiative.
- Assisted 'Ōhi'a Productions with the teacher education packet for its "In the Clear Blue Sea" theater production.
- Helped to obtain grant for having the "Voices of the Rainforest" show tour the neighbor islands.
- Supported production of the "Voices of the Rainforest" video for distribution to elementary, secondary, and public libraries statewide.
- Created exhibit about Nā Ala Hele hiking trails on all the main islands.